

REMARKS

The Examiner maintains the rejection of claims 1-7 under 35 U.S.C. 103(a) as being unpatentable over of combination of Jiang et al in view of He et al, Minamino et al and/or Schmidt. Claims 8 and 9 are objected to as depending from a rejected base claim, and claims 10 and 11 are allowed.

Applicant's claimed invention is a fiber pigtailed assembly **10** for coupling light from an optical fiber **28** to an optical detector **26** which produces essentially zero polarization-dependent responsivity (PDR) and low back reflection. The optical fiber has a beveled end and a diameter less than the area of the detector. Further the detector surface is tilted and rotated with respect to the beveled end of the optical fiber, resulting both in low back reflection and essentially zero PDR.

In contradistinction to Applicant's claimed invention Jiang et al disclose an assembly for coupling an optical fiber 106 to an optical detector 104 which includes a beveled end α to reduce back reflection from the end face of the optical fiber. Further the optical detector may be canted at an angle β to reduce back reflection from the detector back into the optical fiber. The angles α and β are interdependent, and one may be eliminated entirely if the other angle is large enough (see col. 4, lines 34-55). There is no addressing here of the PDR problem addressed by Applicant's claimed invention. It is noted that the cant of the detector is not rotated with respect to the beveled end of the optical fiber as recited by Applicant in claim 1 -- the two tilt angles of Jiang et al are positioned to be additive. (Compare Jiang et al Fig. 8 with Applicant Fig. 4)

The purpose of He et al is to intentionally introduce PDR into the optical signal transmitted from the optical fiber to the optical detector to compensate for the inherent polarization dependency of the optical detector. This ability to introduce PDR into the optical signal is recognized by Applicant (page 2, lines 15-17) as being the result of tilted surfaces. The present invention seeks both to provide low back reflection and essentially zero PDR, whereas the combination of He et al with Jiang et al produces low back reflection but significant PDR which does not produce the invention as claimed by Applicant. Neither reference teaches nor suggests to one of ordinary skill in the art the “rotation” of the beveled end of the optical fiber with respect to the tilt of the optical detector surface, as is recited in claim 1. Thus claim 1 and all claims dependent therefrom are deemed to be allowable as being non-obvious to one of ordinary skill in the art over Jiang et al and He et al.

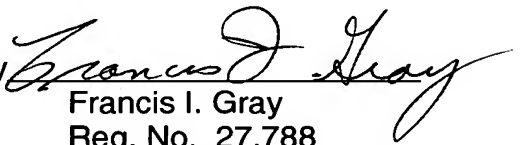
With respect to claim 2 Minamino et al disclose a fixed inclination adjusting piece 12; 16 which determines the inclination, but does not allow for adjusting the tilt angle as recited in claims 2 and 4. None of the references teach a housing having a fiber holding portion, a detector holding portion *and* a connection portion as it recited in claim 3 – the references show a separate fiber holding housing, a separate detector holding portion and in two instances some sort of fixed spacer between the two separate housings. Since none of the references have a connection portion, they also don’t teach or suggest that the connection portion is flexible as recited in claim 5. Further they don’t show a means coupled to the housing for angularly varying the gap between the fiber and detector holding portions, such as a screw threaded through one of the holding portions to contact an opposing surface so that adjustment of the screw causes the gap to widen as recited in claim 6. Finally claim

7 recites that the opposing end of the optical fiber is coupled to an external fiber with low back reflection and minimum PDR, which results from having two beveled surfaces that are rotated with respect to each other (see Applicant Figs. 7-8 compared to Schmidt Fig. 1 where the beveled surfaces are parallel so that PDR is introduced into the optical signal, not minimized). Therefore combining Schmidt with Jiang et al and He et al does not produce a fiber pigtailed assembly that produces essentially zero PDR and low back reflection both at the optical fiber interface with the detector and the optical fiber interface with an external optical fiber. Thus claims 2-7 each are deemed to be allowable separately from claim 1 as being non-obvious to one of ordinary skill in the art over Jiang et al in view of He et al, Minamino et al and/or Schmidt.

In view of the foregoing remarks allowance of claims 1-11 is urged, and such action and the issuance of this case are requested.

Respectfully submitted,

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